MICRO CASE 72 – Sporothrix schenckii (sporotrichosis)

A 58 year old man presented with a **3 week history of progressive, mildly painful skin lesions** **on his left arm** that had begun with an erythematous lesion on his left thumb. A **reddish streak** was apparent along these lesions. The patient did not have any fevers or chills.

He enjoyed **working in his garden** but he did not recall any specific injury.

* PHYSICAL EXAM
  + Multiple erythematous lesions from thumb to elbow
  + Lymphatic streaking
  + Ulcerated lesion
* DIAGNOSTIC WORK UP
  + Gram and acid fast stain of biopsy of freshly opened skin lesion or pus
  + Fungal stain and microscopy of biopsy
  + Cultures of biopsy or pus
* DIFFERENTIAL
  + Boils due to pyogenic bacteria (staph aureus and step pyogenes); cat scratch fever; cutaneous manifestations of AIDS; sporotrichosis; nocardia spp.; mycobacterial infestions of the skin (mycobacterium marinum); tularemia
  + Rationale: few organisms that manifest with such a SUBACUTE manner. Sporotrichosis is most common of these. Some of the other infections,notably cat scratch fever and tularemia, usually produce significant SYSTEMIC symptoms and have appropriate exposure histories. Pyogenic infections present more acutely and perhaps with systemic symtoms.
* MICROBIOLOGIC PROPERTIES
  + Dimorphic fungi (**CIGAR-SHAPED YEAST** at 37 degrees and darkly pigmented mold with **microconida in floral/ daisy arrangements** at 22 degress) (mnemonic: cold = mold and heat = yeast)
* EPIDEMIOLOGY
  + Found worldwide **in sphagnum, moss, hay, and soil** (therefore, commonly seen in **gardeners** and farmers… organisms enter the subq tissue via punctures from thorns, etc.)
  + Sometimes see zoonotic transmission
* PATHOGENESIS
  + (1) Skin is punctured or abraded by thorns or other vegetations contaminated with fungal spores (2) Develop in smooth or verrucose painLESS nodules that may ulcerate and drain (3) Fungus spreads from initial lesion along lymphatic channels (although LYMPH NODES ARE NOT USUALLY INVOLVED), forming chain of nodular lesions (this typifies the lymphocutanous form of the disease)
  + The lesions are suppurating granuloms, which are composed of histiocyts and giant cells surrounded by neutrophils, lymphocytes and plasma cells
    - Occassionaly, inhalation of the organism may create chronic, cavitary pneumonia which is clinically and radiographically indistinguishable from Tb, Dissemination is rare.
* TREATMENT
  + Oral Potassium iodide cures mild subq disease
  + Oral itraconazole better for lymphocutaneous and osteoarticular disease
  + Amph B for pulmonary complications
* PREVENTION
  + No vaccine
  + Thorough debridement and cleaning

